REMARKS

Claims 1, 3, 5-17 and 75-116 are pending in the present application, with claims 79 and 100-111 withdrawn as being directed to non-elected species. Claims 2, 4 and 18-74 were previously canceled.

Applicants respectfully traverse the Examiner's statements that Applicants did not distinctly and specifically point out the Examiner's errors and that the Examiner treats the election as being without traverse. In the Office Action dated 5/19/06, the Examiner confirmed Applicants' provisional election of Group I out of 9 Groups, and issued an action on the merits for the elected claims. According to MPEP Rule 818.01, the "election becomes fixed when [the case] receives an action on the merits by the Office." Through a series of additional restrictions, the Examiner appeared to require restrictions that are outside of the original election, and later stated that the new restrictions supersede the original restriction. Applicants in subsequent elections dated 9/24/07, 12/10/07, 5/15/08 and 7/14/08 had clearly explained that all the pending claims read on the original election and that the reasons for the traversal include the Examiner's alleged violation of MPEP Rule 818.01 (*see e.g.*, election dated 5/15/08).

Applicants respectfully reserve the right to seek a review of the Examiner's restrictions to clarify whether the original restriction stated in the Office Action dated 5/19/06 controls so that the proper inventors can be identified/confirmed for the present application and future divisional applications can be directed to proper unelected Groups, *inter alia*. Alternatively, Applicants respectfully request that the Examiner confirm that the original restriction discussed in the Office Action dated 5/19/06 controls the present prosecution and examines all of the withdrawn claims.

Rejections under 35 U.S.C. § 112

Claims 76, 77, 82, 83, 92-99, 115 and 116 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The Examiner asserts that the recitation of a "pressure differential device" is new matter, and that he can find no support in the instant specification for said device. Applicants respectfully disagree with the Examiner, because support for a "pressure differential device" is found in the originally filed specification from page 8, line 23 to page 9, line 2, and such support was previously mentioned in the table appearing on page 13 of the amendment dated May 9, 2007 More particularly, this section states in part:

> Membrane 32 is selected so that a certain pressure differential across the membrane is necessary for hydrogen gas to migrate across the membrane. Due to the presence of hydrogen gas the pressure in reactant compartment 16 is higher than the pressure in fuel compartment 14 and movable wall 18 is pushed by this differential pressure to force fuel out of fuel compartment 14 to reaction chamber 22. To ensure that pressure inside reactant compartment 16 remains higher than fuel compartment 14, a poppet valve as described in the '004 application can be used in conjunction with membrane 32. Alternatively, in place of a poppet valve, a porous member, such as a filler, a foam or the like, can be used. Such porous member requires a pressure drop across it for hydrogen to move from reactant compartment 16 to internal spacing 34 and valve 36.

(emphasis added). A person of ordinary skill in the art would readily understand that poppet valve, porous member, filler, foam, or the like are all references to a pressure differential device. *i.e.*, these devices need a pressure drop across it in order for hydrogen to pass therethrough. Accordingly, Applicants respectfully request the withdrawal of this rejection under 35 U.S.C. 112.

Rejections under 35 U.S.C. 102(e)

Claims 82-86, 89-99 and 112-116 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. patent no. 6,932,847 to Amendola. Claims 82, 92, and 112 are the independent claims.

Independent claim 82 is patentable over Amendola. The Examiner argues that Amendola discloses a gas permeable, liquid impermeable membrane in separation device (401), which is a part of the reactant compartment (102), merely because the separation device is in fluid communication with the reactant compartment via spent fuel tube (109). Applicants respectfully disagree with the Examiner's rationale that because a first component (401) is in fluid communication with a second component (102) though a conduit (109), the first component is a part of the second component. Taking the Examiner's rationale to its logical conclusion would dictate that the entire hydrogen generator disclosed in Amendola comprises a single component, because all its parts are in fluid communication with each other, in order for fuel, hydrogen and byproduct to flow through the system.

To further distinguish Amendola, claim 82 is amended to require that the gas permeable, liquid impermeable membrane is disposed on a wall of the second reactant component. Furthermore, claim 82 requires that hydrogen is transported from the second reactant compartment, not from the third reaction chamber and not from the channel connecting the reaction chamber to the second reactant compartment. By contrast, at best, Amendola shows passing hydrogen gas out from either the reaction/catalyst chamber 107 or through spent fuel tube 109 via a separating device 401. For these reasons alone, claim 82 is patentable over Amendola.

To move the prosecution toward allowance, Applicants have further amended claim 82 to add a housing member and a spacing (34) in the flow path of hydrogen to distinguish this claim from Amendola, as follows:

> wherein the second reactant compartment is at least partially inside a housing member and comprises a gas permeable, liquid impermeable membrane disposed on a wall of the second reactant compartment and fluidly connecting the second reactant compartment to the housing member, and the hydrogen gas passes through the gas permeable, liquid impermeable membrane and out of the second reactant compartment to a spacing between the second reactant component and the housing member and then to the fuel cell

(underlined texts denote the added elements).

In the Amendola reference, spent fuel container 102 corresponds to the claimed element second reactant compartment. Spent fuel container 102 is the outermost member of the Amendola hydrogen generator and there is no housing that at least partially surrounds the spent fuel container. Claim 82 has been amended to recite that the second reactant compartment is at least partially inside a housing and that the membrane is connecting the second reactant compartment to this housing, so that the hydrogen gas is produced into spacing (34) (see Figure 1 of the present application) and then to the fuel cell.

The rationale for having a housing member at least partially outside of the second reactant chamber (16) and for hydrogen to flow to spacing (34) before flowing to the fuel cell is that the claimed fuel supply can work in multiple orientations. The Examiner is invited to orient the fuel supply of Figure 1 in multiple orientations. Because the reactants (hydrogen and borate byproduct) are contained within reactant chamber (16) and only hydrogen can leave through membrane (32) to spacing (34), the claimed fuel supply works at multiple orientations without redesign. In other words, valve 36, which is connected to the fuel cell, can be positioned on the left of the housing member (as shown in Figure 1), on the top, on the bottom, on the left or at any corner of the housing member and hydrogen gas can still be produced to the fuel cell.

On the other hand, the hydrogen generator in Amendola would not work in an orientation other than the positions shown. The clearest support for this assertion is that the bottom end of dip tube 112 may not be in contact with the liquid fuel and liquid fuel can no longer be pumped out if the Amendola generator is positioned in different orientations. Additionally, in the embodiment of Figures 1-2, if hydrogen line 110 is flooded, which would happen when the device is positioned sideways with hydrogen line 110 on the bottom, hydrogen can no longer flow through it. In the embodiment of Figure 3, where Amendola attempts to show its hydrogen generator in a second orientation, the design was changed to accommodate this orientation, *i.e.*, the hydrogen line 110 is now fixed on top, the spent fuel line 109 is lengthened and is located at the same location as the hydrogen line 110. Furthermore, the fuel aperture 113 is moved to the side instead, and dip tube 112 is shortened to accommodate the sideway geometry.

In the embodiment of Figure 4 of Amendola, both hydrogen separation device 401 and hydrogen line 110 form an offshoot or appendix connected to a side of spent fuel tube 109. Hydrogen gas and the borate byproduct are carried in spent fuel tube 109. Since hydrogen naturally rises to the top of the aqueous borate byproduct in this spent tube 109, hydrogen separation device 401 has to be on top, to separate hydrogen. Having the gas separation membrane being on the wall of the reactant compartment, as recited in claim 82, increases the ability for gas separation, due to the proximity of the membrane to the borate byproduct and hydrogen.

Furthermore, no embodiment of Amendola has a housing member and a spacing between the housing member and the second reactant compartment, as claimed, to store hydrogen. The containment of the byproduct in the second reactant compartment and the passage of hydrogen through said spacing, as claimed, allow the fuel supply of claim 82 to operate in a different manner than Amendola.

Hence, claim 82 is patentable over Amendola. Claims 83-86, 89-91 and 110(withdrawn) all depend upon allowable claim 82 and add further limitations thereto, and therefore are patentable for that reason alone. Applicants reserve the right to further support the patentability of these dependent claims, should that become necessary.

Independent claim 92 is also patentable over Amendola. Claim 92 recites *inter alia* "a pressure differential device, said pressure differential device requires a pressure differential for hydrogen gas to pass therethrough to ensure that a pressure in the second reactant compartment is higher than a pressure in the first fuel compartment." Amendola does not teach a pressure differential, let alone a pressure differential device. The check valves, which are mentioned in the Office Action in connection with claim 92, are merely used to prevent back flow of liquid fuel and not as pressure differential devices to control the flow of hydrogen gas (see Amendola, column 6, ln. 25-40). Furthermore, the check valve discussed in Amendola is associated with fuel container 101, which corresponds to the first fuel component in claim 92. On the other hand, the claimed pressure differential device in claim 92 is associated with the third reactant chamber. For this reason, claim 92 is patentable over Amendola. Also, claim 92 is amended similarly to claim 82, discussed above, and is also patentable for the reasons that claim 82 is patentable.

For all the reasons above, claim 92 is not anticipated by Amendola. Claims 93-99 and 111(withdrawn) all depend upon allowable claim 92 and add further limitations thereto, and therefore are patentable for that reason alone. Applicants reserve the right to further support the patentability of these dependent claims, should that become necessary.

Independent claim 112 is amended similarly to claim 82, discussed above, and is patentable over Amendola for the reasons that claim 82 is patentable. Dependent claims 113-116 are also patentable based on their dependency. Applicants reserve the right to further support the patentability of these dependent claims, should that become necessary.

Rejection under 35 U.S.C. 103(a)

Claims 1, 3, 7-9, 11, 13, 15-17, 75-78 and 81 are rejected under 35 U.S.C. 103(a) as being obvious over Amendola. Claims 5, 6, 12, 87 and 88 are rejected under 35 U.S.C. 103(a) as being obvious over Amendola in view of U.S. patent application publication no. 2003/0138679 to Prased. Claim 14 is rejected under 35 U.S.C. § 103 as being obvious over Prased and Applicants' admitted prior art ("AAPA"). Claim 1 is the only independent claim in this group. Applicants respectfully disagree with the Examiner.

Applicants respectfully disagree with the Examiner's assertion that Amendola discloses the claimed invention except for a membrane disposed on a wall of the second reactant compartment. As previously discussed in the Amendment dated May 9, 2007, independent claim 1 recites *inter alia* that "hydrogen gas and liquid reactant are transported *through a channel* to the second reactant compartment" (emphasis added) and that "the hydrogen gas passes through the gas permeable, liquid impermeable membrane and out of the second reactant compartment ... to the fuel cell." As discussed above, Amendola shows passing hydrogen gas out from either the reaction/catalyst chamber 107 or through spent fuel tube 109. Contrarily, claim 1 requires that hydrogen is transported from the second reactant compartment, not from the reaction chamber and not from the channel connecting the reaction chamber to the second reactant compartment.

Also to move the present application to allowance, claim 1 is amended similarly to claim 82, discussed above, and is also patentable for substantially the same reasons that claim 82 is patentable.

For all the reasons above, claim 1 is patentable over Amendola. Claims 3, 5-9, 11-17, 75-78, 79(withdrawn), 81, 87 and 88 all depend upon allowable claim 1 and add further limitations thereto, and therefore are patentable on that basis alone. Applicants reserve the right to further support the patentability of these dependent claims, should that become necessary.

Claim Objection

Claim 10 is objected to as being dependent on a rejected base claim, but would be allowable if written in independent form. Because claim 10 depends on patentable claim 1, Applicants respectfully request the withdrawal of the objection to claim 10.

Withdrawn Claims

Among withdrawn claims 79, 100-111, claim 100 is the only independent claim. Applicants have amended claim 100 similar to claims 1, 82, 92 and 112, namely to add the limitations that the second reactant compartment being at least inside a housing member and that the hydrogen gas passes from the second reactant compartment to a spacing between the housing member and the second reactant compartment and then to the fuel cell. The examination of claim 100 and its dependent claims 101-109 would not pose a serious burden on the examiner, because all of the other independent claims have similar limitations. Hence, Applicants hereby respectfully request that claims 100-109 be examined. Withdrawn dependent claims 79, 110 and 111 depend on other independent claims and would be re-joined if these independent claims are allowed.

Information Disclosure Statement

Pursuant to Rule 1.56, Applicants attach herewith an IDS disclosing U.S. patent no. 7,344,571 to Bae et al. (published as US 2005/0036941). The Bae reference was cited by another patent examiner in connection with a commonly owned co-pending patent application. During the preparation for an in-person interview for that patent application last month, the undersigned attorney recognized the Bae reference, which was filed on August 14, 2003 or less than two months before the filing date of the present application, is prior art under 35 U.S.C. § 102(e) in connection with the present application.

Applicants also submit herewith a Declaration under Rule 1.131 executed by Mr. Andrew J. Curello, a co-inventor in the present application. As evidenced by the Invention Disclosure Form (attached as Exhibit A to the Declaration), Mr. Curello conceived the invention shown in Figure 1 and currently claimed in the present patent application of the present invention as early as April 1, 2003. For clarity, the portions of the Invention Disclosure Form not related to Figure 1 and the pending claims, *i.e.*, drawings related to the unelected inventions/species, are omitted.

The figure shown on the top of the drawing sheet in Exhibit A (last page) represents his first attempt at designing a hydrogen generator. The figure shown at the bottom of the same drawing sheet is his next attempt and is the predecessor of both Figures 1 and 2 of the '756 patent application and has the date of April 1, 2003.

The Invention Disclosure Form was submitted to the assignee on or about May 6, 2003, and was witnessed by Mr. Floyd Fairbanks on May 6, 2003 as shown. Mr. Fairbanks was originally listed as a co-inventor on the '756 application, but his contributions relate to unelected embodiments. By petition Mr. Fairbanks, among others, were deleted as co-inventors. The third page of the Invention Disclosure shows that Mr. Curello conceived this design as early as April 1, 2003 and discussed the design with co-inventor Mr. Paul Adams.

Applicants diligently reduced the invention to practice by working continually with the undersigned to prepare the present application (Exhibits B-E), reviewing and fine-tuning the design (Exhibit E). The invention was constructively reduced to practice as early as October 6, 2003, when the present application was filed with the United States Patent and Trademark Office. Hence, the date of invention for the present patent application is as early as April 1, 2003, which predates the Bae reference.

Conclusion

In light of the preceding, Applicants believe that the presently pending claims are in condition for allowance, early notice of which would be greatly appreciated. The Examiner is invited to telephone the undersigned attorney of record if he believes that such a call would materially advance the prosecution and eventual allowance of the present application.

Fees for a Request for Continued Examination and three month extension of time are paid with this submission. No fee is believed due for the IDS submission, since with the RCE the case is treated as a new case. However, if any other fees are due, the Commissioner may charge appropriate fees to The H.T. Than Law Group, Deposit Account No. 50-1980, and if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a).

Respectfully submitted,

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